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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,664	11/25/2003	Tetsuya Fukuda	9281-4714	5952

7590 10/18/2006

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EXAMINER
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PETKOVSEK, DANIEL J

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 10/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/721,664	Applicant(s) FUKUDA ET AL.	
	Examiner <i>Dep 10/10/06</i> Daniel J. Petkovsek	Art Unit 2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on RCE amendment filed October 5, 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 13-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 13-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on November 25, 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)<br>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)<br>3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/1/06</u> . | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____<br>5) <input type="checkbox"/> Notice of Informal Patent Application<br>6) <input type="checkbox"/> Other: _____. |
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### **DETAILED ACTION**

This office action is in response to the RCE amendment filed October 5, 2006. In accordance with the amendment, claims 1, 8, and 27 have been amended; claims 11 and 12 have been canceled; while new claims 28 and 29 have been added.

Claims 1-10 and 13-29 are pending.

#### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 5, 2006 has been entered.

#### ***Information Disclosure Statement***

2. The prior art documents submitted by Applicant in the Information Disclosure Statements filed on June 1, 2006, have been considered and made of record (note attached copy of forms PTO-1449).

#### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 3, 8-10, 13-15, 18, 19, and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Banish et al. US 2002/0135869 A1.

Banish et al. US 2002/0135869 A1 teaches (ABS; Figs. 2, 3, 16, and 17; [0005], [0018], [0019], [0050]-[0054]) an anti-reflective structure 101 comprising many micro holes in area 103 each having an opening at a first surface and a bottom facing a second surface opposite to the first surface, each hole extending from the opening to the bottom, the first surface adjacent to each micro hole being substantially planar, the micro holes shaped to prevent light incident on the anti-reflective structure from being reflected by the anti-reflective structure, wherein the pitch of the micro holes is half or less than half of a wavelength of the light incident on the anti-reflective structure (see in particular ABS, claims 1, 12, and 13), which clearly, fully meets Applicant's claimed limitations.

Regarding independent claim 8, with subsequent claims 9, 10, 19, and 25, see [0018]-[0019] for applications and uses in other light guiding functions, such as integrated photonic devices, flat panel displays (having reflective means), and other optical applications, which would be *integrally* formed.

Regarding claim 3, reflectance is 0.7%, at least in one embodiment ([0095]).

Regarding claim 13, the pitch can be about one half of the wavelength of incident light (4 um).

Regarding claims 14, 15, and 18, the second surface is substantially planar, with an opening at a second surface and a bottom facing the first surface.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2, 4-7, 16, 17, 20-24, and 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Banish et al. US 2002/0135869 A1.

Banish et al. US 2002/0135869 A1 teaches (ABS; Figs. 2, 3, 16, and 17; [0005], [0018], [0019], [0050]-[0054]) an anti-reflective structure 101 comprising many micro holes in area 103 each having an opening at a first surface and a bottom facing a second surface opposite to the first surface, each hole extending from the opening to the bottom, the first surface adjacent to each micro hole being substantially planar, the micro holes shaped to prevent light incident on the anti-reflective structure from being reflected by the anti-reflective structure, wherein the pitch of the micro holes is half or less than half of a wavelength of the light incident on the anti-reflective structure. Banish et al. '869 does not *explicitly* teach the dependent claim limitations of claims 2, 4-7, 16, 17, 20-24, and 26-29.

At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to realize slight and minor modifications to the art of Banish et al. '869 because Applicant has not disclosed that the missing claim limitations (at least not explicitly disclosed by Banish et al. '869) provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with the number of design choices that

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slightly differ from the claims of 2, 4-7, 16, 17, 20-24, and 26-29 because the anti-reflective structure of Banish et al. '869 would perform equally well with a number of different arrangements, shapes, sizes, wavelength ranges, as well as use with LCDs and reflective films. Therefore, it would have been an obvious matter of design choice to modify Banish et al. '869 to obtain the invention as specified in claims 2, 4-7, 16, 17, 20-24, and 26-29.

### *Response to Arguments*

7. Applicant's arguments with respect to claims 1-10, 13, 14, 16-20, and 22-26, as previously rejected to Gotoh et al. '424 under either 35 U.S.C. 102(e) or 35 U.S.C. 103(a) have been considered but are moot in view of the new grounds of rejection to Banish et al. '869. The rejections to Gotoh et al. '424 have been withdrawn, since Applicant's arguments in the RCE filed October 5, 2006 were persuasive (to the pitch of the micro holes being half or less than half of a wavelength of light incident).


### *Conclusion*

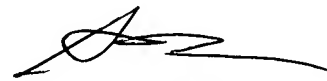
8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: PTO-892 form references A and B.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Petkovsek whose telephone number is (571) 272-2355. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Daniel Petkovsek  
October 11, 2006

  
**SUNG PAK**  
**PRIMARY EXAMINER**